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Original Communications.

THE ORIGIN AND SIGNIFICATION OF THE
SYMPTOMS OF BRAIN DISEASE.

A Lecture delivered in Boston, Oct. 5th, 1872,
by C. E. BROWN-SEQUARD, M.D.

Reported for the JOURNAL by S. G. WEBBER, M.D.

THE lecturer stated that he found the task a difficult one to condense all he wished to say into the time allowed for one lecture; he would therefore occupy the present lecture chiefly in refuting certain views which are an obstruction to progress, reserving for another time the process of rebuilding new views.

According to the view for a long time held by medical men, the brain is an organ which serves to induce action in other parts of the body, and which in turn receives the impressions made upon various portions of the body; it is, in fact, the centre for various functions. A great modification must be made in this view; we must now recognize more centres for volition and more for perception than have been hitherto admitted.

It is generally considered that the hemispheres of the brain act each on the opposite side of the body. Dr. Brown-Séquard thinks he can establish the fact that one hemisphere is sufficient to act on both sides of the body, can cause motion in both sides and can perceive sensations coming from both sides. It is at first difficult to admit this view, for so many facts apparently show that injury in one hemisphere destroys motion and sensation on the other side of the body.

The time would not suffice to go fully into the views of Carpenter and Broadbent. The latter has shown that in cases of cerebral disease, the knees, the tongue, the face and a few of the muscles connecting the limbs to the trunk are the ones paralyzed. He considers that the medulla may

give rise to an influence which will cause both eyes to act; so if the left side of the brain is diseased, the affection of the muscles of the trunk is not confined to one side, for the medulla acts on both sides. This view Brown-Séquard thinks cannot be correct, for cases of disease of the medulla disprove it.

It is the common view that paralysis is due to destruction of brain tissue, and that excess of action is caused by irritation of a diseased part; but we know that a limb may be both paralyzed and convulsed at the same time, which are directly opposite conditions, according to this view.

Cases occur of disease of the brain on both sides without any symptoms, even extensive disease, which must have existed many months before death; there are also cases of symptoms of brain disease without signs of actual disease of that organ, even after careful microscopic examination, symptoms such as paralysis, coma, convulsions and others without disease, with no toxæmia or alteration of the blood to produce them.

Again, there is no relation between the intensity of symptoms and the extent of the disease. The same disease may be found in different people with different symptoms, and the same symptoms may accompany different diseases. Disease of any of the viscera, as the liver or kidneys, may produce symptoms of brain disease by alteration of the blood, producing a poison; this poison must be the same in each case of kidney disease, but the symptoms are not the same. It must be that there is another cause in action at the same time with the toxæmia. This is the irritation of the nerves of the viscus, and it is to the variation in this irritation of the nerves that varying symptoms are due.

A prick of a lung may give rise to partial closure of the eye and constriction of the pupil on the same side. If a simple prick will produce such phenomena, then inflammation of a large mass of the viscus

may produce greater disturbance—as, for instance, pneumonia, which may give rise to paralysis, continuing even after the pneumonia has passed away. Many facts show that loss of power is not due to lesion of the brain alone. Reference was made to cerebral tumor with symptoms of varying intensity, at times resulting in almost complete recovery. Symptoms also may disappear just before death, as in cases of insanity, and yet the autopsy show great disease of long standing.

Disease of the membranes may be compared with that of the brain; the former may cause all the symptoms of the latter, and some, as convulsions, may occur even more frequently from meningeal than cerebral trouble. As the pia mater lies next the brain, it might be supposed that disease of it would cause more cerebral symptoms than disease of the dura mater. Affections of the latter, however, are more similar to disease of the brain than those of the pia mater. This may show that disease of the brain itself may cause symptoms by irritation acting on other parts of the brain.

Disease of the mucous membrane and of the skin may cause symptoms of brain disease. A young gentleman had all the symptoms of softening of the brain and general paralysis. On examination, it was noticed that he carried his hand frequently to his penis. An inflammation was found at that point, which by proper treatment was cured, and in a week the cerebral symptoms had disappeared.

If the difference in action in the two sides of the brain be studied, it will also be perceived that symptoms do not arise from direct destruction of function. In regard to aphasia, some symptoms appear when the right side is diseased; it is generally, however, found in disease of the left side. The loss of intelligence is most marked in disease of the left side, and the mechanical part of speech is more altered.

When the right side of the brain is affected, lesions indicating alteration of nutrition are more frequently found. In animals, hæmorrhage in the lung and œdema of the lung are found in lesions of the right side, especially at the base; or there may be congestion in one part and œdema in another. In this œdema it is found that there are no red corpuscles in the vessels; some serum is found around them, but they are filled with white corpuscles. So in man, hæmorrhage and inflammation in the lung are more frequent when the disease is on the right side. Optic neuritis in one or both eyes is more frequently seen in disease

in the right of the brain. The tumor of the lobe of the ear (hematoma auris), so often seen in insane asylums, and attributed often to mechanical injuries, is due to nervous influence; it may be produced at once by injury to the base of the brain. It may be caused in animals within a few hours, and may be followed even by gangrene. The left ear is the one generally affected, opposite the seat of disease in the brain.

Two other alterations of nutrition are more frequently seen in disease of the right side of the brain than the left—œdema of paralyzed parts and bed-sores. The latter lesions, as may be observed, are on parts opposite the seat of lesion in the brain, and are not the result of pressure.

In most cases of epilepsy, cerebral lesion is confined to the right side. The deviation of both eyes is met with more frequently when the lesion is on the right. So, too, the paralysis of limbs is more considerable and more lasting. Phenomena of hysteria are more frequently located on the left side. In nine cases where the convulsions were affected with the paralysis on the same side, it was twice on the left, seven times on the right. With other parts affected, fifty times the lesion was on the right, with the paralysis on the right. Hæmorrhage on the right side destroys the patient quicker than when it is on the left. Among animals, of 28 injured on the left side, 16 survived; of 47 injured on the right, only 11 survived. If lesion of the right side causes changes in nutrition, as already mentioned, it is natural that more deaths should occur than when the left side is injured.

One side of the brain is sufficient for the functional integrity of both sides of the body. If the outer half of the right eye and inner half of the left eye receive fibres from the right side of the brain, as has been described, then injury of the right optic tract should cause hemiopia. This has been found to be the case. But disease in the optic tract may also cause hemiopia in one eye, or may cause amaurosis in both sides of the opposite eye, or of both sides of the corresponding eye. These views are contrary to those generally entertained. It may also cause amaurosis on opposite sides of each eye. Destruction of the tubercular quadrigemina on one side and of the neighboring optic tract has been known to cause no amaurosis. It must then be admitted that one optic tract is sufficient to transmit visual impressions to the brain, and half of the brain may serve for vision in both eyes. In animals it is found that irritation at a distance from the eye may

produce amaurosis. Injury to the medulla oblongata will cause amaurosis on the same side, and injury in front of the medulla oblongata, amaurosis on the opposite side. Amaurosis may be caused by irritation of other parts, as of the facial nerve, or by disturbance of the intestines, as by the presence of worms. In these cases, it is the nutrition of the retina and of the brain which is affected.

As disease of the right side may produce aphasia in right-handed persons, so it may arise from other causes than loss of function of the third left frontal convolution. Without any organic lesion in any part, aphasia may be present. It may come and go with peripheral irritation. It may be found in connection with lesion of other parts of the left hemisphere than the third frontal convolution. Aphasia is rare in children, and there may be atrophy of the left side of the brain without aphasia.

Again, disease of the third left frontal convolution may exist without aphasia, as in the case reported by Drs. Bigelow and Harlow where the crow-bar passed through a man's head; in another case, a ball destroyed that convolution without causing aphasia, and the man was not left-handed. Aphasics with disease of the third convolution have been known to talk when insane. There are, also, cases of sudden recovery from aphasia. General paralytics often speak badly, and their third frontal convolution is diseased like the rest of the brain.

Hemiplegia, as a symptom of brain disease, varies greatly; it may not exist with great disease, or it may be present when there is slight disease. In complete hemiplegia, there is always some paralysis of the opposite side, with disease of only one side of the brain. Irritation, then, may affect the nutrition of the opposite side, and so cause paralysis.

The anterior pyramids decussate. A disease of the crus cerebelli, or the restiform body or the part of the pons near the root of the fifth nerve on which the crus cerebelli is implanted, a tumor, for instance, pressing on those parts, causes paralysis on the same side. If, instead of pressure, there is destruction of the part, there ought to be paralysis on both sides, if, in the former case, the paralysis on the same side was due to destruction of superficial fibres, for both the deep and superficial fibres are, in this case, implicated. Only one case is known where both sides were paralyzed. In other cases, there has been considerable disease without paralysis. So when the disease is the cause of paralysis in the same side

it is by the action of irritation in other parts. The symptoms are not caused by loss of function or by irritation at the part affected.

Can we form a diagnosis? Yes. Disease of the base in affections of the brain causes symptoms differing according to the nerves implicated. Aphasia may occur, generally, with one lesion, and a diagnosis be made as if the old view of brain disease were correct; and so of other symptoms.

By what mechanism are the symptoms caused? There are two classes, those of irritation and those of cessation of activity. Reference was made by the lecturer to the inhibitory phenomena in connection with the heart and respiration. As certain irritations cause the cessation of the heart's action and of respiration, by influencing nerve cells, so the will can act to check or stop the action of the respiratory centres, or of the centres for action of the sphincter muscles; so, also, it may stop spasms, as coughing or sneezing. Some symptoms of disease may be prevented by inhibitory action.

A case of the latter was shown by a negro and his master. The latter had disease of the spinal cord, one symptom being general rigidity, with convulsions on being touched. The negro stopped these by drawing on the big toe of his master, and so, during the interval of quiet, was enabled to dress him. In Guinea pigs in which epilepsy has been produced artificially, the spasms may be stopped by the action of carbonic acid gas on the larynx, for which purpose the tube conveying the gas must be passed well into the mouth near to the larynx. Cauterization of the larynx in epilepsy has been proposed, and performed a few times with success, especially when the muscles of the larynx seemed implicated in the fit.

A prick of the posterior columns may produce paralysis at once, and so of other parts at a distance from the brain. So we may understand that the brain, having also nerve fibres, may affect other parts.

TREATMENT OF HÆMORRHAGE FROM THE BOWELS IN TYPHOID FEVER.—Dr. S. Weed (*Buffalo Med. and Surg. Journal*, August, 1872) reports five cases in which this complication arose, in some of them the loss of blood being very great. All the cases recovered under the use of oil of turpentine. It was given at first in teaspoonful doses once an hour, or oftener if necessary, and after two or three repetitions twenty drops were prescribed to be taken every two hours.

Progress in Medicine.

REPORT ON PATHOLOGY AND PATHOLOGICAL ANATOMY.

By R. H. FITZ, M.D. Harv.

GENERAL PATHOLOGY.

Infection.—Prof. Klebs has recently published (Leipzig, 1872) a work on the pathological anatomy of gun-shot wounds, in which he states that he has found as the cause of infection in pyæmia and septicæmia a parasitic fungus, called by him *microsporon septicum*. Under his direction a series of investigations were instituted by Zalin and Tiegel (*Centralblatt*, 1872, p. 216). The former established the fact that this fungus produced inflammation and suppuration; the latter that it gave rise to fever. Tiegel cultivated the fungus, and was able to exclude the presence of all material except that produced by the fungus in certain of his experiments. He showed that when a fluid containing the same was introduced into the body, a fever was produced whose curve was analogous to that of the fever produced by sepsine (discovered by Bergmann and Schmiedeberg in 1868 in putrid wounds). Tiegel concludes that sepsine must be present in this fluid, though he was unable to isolate it. He then inferred that sepsine is produced by the fungus, as it is improbable that the fever should be produced simply by its mechanical action.

Theoretically, the sepsine produces the fever chemically by causing a higher degree of oxidation in the tissues and blood; or it acts through the central nervous system (Stricker.) The rapid putrefaction of bodies dead from septicæmia favors the first idea.

Nepveau (*Gaz. Méd. de Paris, The Med. Record*, 1872, Nos. 145 and 146) states that he finds bacteria in the blood of patients suffering from erysipelas, idiopathic or traumatic; whether they always occur in both forms is not established.

Waldayer (*Archiv f. Gynækologie*, 1872, iii. p. 293, *Centrbl.*, 1872, p. 251) examined the diphtheritic membrane from the inner surface of the uterus, the contents of the lymphatic vessels, the peritoneal exudation in four cases of puerperal fever, and in one case the pleuritic and pericardial exudation were also examined. In all these places an immense number of bacteria were found; in the diphtheritic patches, between the pus corpuscles and the modified tissue ele-

ments; in other parts, mingled with pus corpuscles, also within the same. The pus corpuscles in the peritoneal fluid were especially filled with the bacteria and the fluid was crowded with them. In the main they were the globular bacteria of Cohn, though in part they were the rod-like micro-bacteria.

Though Waldayer does not attribute extreme importance to their presence, still their occurrence in such quantities does not seem to him a matter of indifference; they must render the course of the disease more severe. The regular continuous extension of the puerperal process suggests an independent advancing infectious material. Waldayer regards the dark granular masses, with difficulty rendered clear, as described by Virchow in parametritis puerperalis, as bacteria; and the lymph thrombi instead of being coagulated lymph are pus corpuscles and bacteria.

Orth (*Archiv d. Heilkde*, 2 and 3 Heft, 1872, *Allg. Centr. Zeit.*, 1872, No. 52) publishes a most interesting case with reference to the effect of fungi in producing disease; also with regard to the essence of puerperal fever. The mother was examined fourteen days before her expected delivery; on the following day, abdominal and sacral pains came on, lasting till delivery, three days after the examination. Before the birth was completed the temperature became elevated, remaining so for the two days following, then became normal for five days, when it again rose, and a perimetritis of the left side was made out. The child seemed well the first day after birth, then refused nourishment, breathed with sobs, became comatose, and died after three days. At the autopsy there were found hæmorrhages beneath the capsule of the left kidney, hæmorrhages and abscesses of the lungs, and pleurisy with exudation. In the pleural false membrane numbers of small glistening bodies were found, forming groups like the zoëglea forms, in and between which the pus corpuscles were enclosed.

In different specimens of fresh blood were large amounts of the round bodies; also a number of the mycothrix chains of Hallier.

Micrococci were found in the alveoli of the lungs, in their vessels and bronchi, and in milliards in the superficial layers of the pleuræ. As the umbilical cord and vessels were normal, Orth considers that the entrance of the parasites must have been intra-uterine, from the maternal blood, which was probably infected three days be-

fore the birth. It is further supposed that an abscess of the lung was first produced; thence the parasites entered the pleural cavity, then into the pleura, as the pleural vessels contained none. Spores were also found in the bladder, and were supposed to have entered from the kidney, in the urine.

Origin of Pus Corpuscles.—F. A. Hoffmann (*Virch. Arch.* vol. liv., 4 Heft), with P. Langerhans, has already shown that some time after the injection of cinnabar into the bloodvessels, grains of the same could be found in the fixed cells of the connective tissue, and that whenever an irritation had occurred, the accumulation of pigment in these cells became so great that one could recognize the place with the naked eye from the red color.

Hoffmann (in the present article) states that wounds were produced and afterwards cauterized, or dilute acetic acid was injected; twenty-two to twenty-four hours after inflammation was thus excited, injections of cinnabar were made.

The pus from the wounded surface contained no cinnabar, yet the tissues from which the pus came contained cells in which were numerous particles of cinnabar; these cells corresponded completely with the so-called fixed connective tissue cells. The pigment was also found in clumps, imbedded in a dense, fibrous stratum; tearing apart these clumps, there were found grains of cinnabar, free or sticking to the tissue fibres, cells containing pigment and debris of cells. These were, doubtless, the remains of encapsuled abscesses. Apart from them, free cinnabar granules were not found in the connective tissue. Hoffmann infers that the fixed cells take no part in the production of pus, but remain wholly passive. Were they destroyed, the cinnabar must be set free after seven to nine days' suppuration, and be found as such, or taken up by the wandering cells. Were they active, it would be probable that cinnabar would appear in the pus, especially as the pigment was found in large amounts in the vicinity of the suppurating surface. Hoffmann had previously shown that cell proliferation in the extirpated cornea occurs, and, from negative testimony, he inferred that the increase proceeded from the fixed corneal corpuscles.

Stricker has found that the wandering cells are capable of division after leaving the vessels, hence the previous inference cannot be regarded as doubtful.

In conclusion, he states, "Up to the present time, any other source for pus cor-

puscles than the bloodvessels has not been proven nor placed upon a scientific basis."

Prof. Schiff, in a lecture before the Academy of Sciences, at Florence (*Berl. Klin. Woch.* 1872, No. 14), asserts that in extensive suppuration the white blood-corpuscles might be replaced in a manner suggested by the experiment of enucleation of the spleen. When this operation is performed on dogs, these corpuscles increase if the animal remains healthy; much more so if peritonitis follows the operation. He asserts that the increase of these depends upon an irritation of the inner coat of the bloodvessels; the more extensive this is, the greater the increase. One can, therefore, regard these as the product or transformation of the epithelial cells clothing the intima. This condition might be called a catarrh of the same.

Amyloid Degeneration.—The time required for the development of amyloid degeneration following long-continued suppuration, no other cause being apparent, was found by Cohnheim (*Virch. Arch.*, vol. liv. p. 271-275) in three cases to take place within a few months. Three soldiers, previously healthy, were wounded in August, and died from four to six months afterwards. In all three cases, amyloid degeneration of the spleen was present, and in one certainly, in another probably, similar degeneration of the kidneys.

GENERAL PATHOLOGICAL ANATOMY.

Rinderpest.—Bollinger (*Arch. f. Thierheilkunde*, xxiv, pp. 261-272. *Centrbl.*, 1872, p. 106). Though this subject might be beyond the scope of the present report, the general interest with regard to this disease, and the well-known authority of Prof. Bollinger, together with his opportunities for observation, have urged the introduction of the following abstract.

The anatomical alterations are those of the original seat of disease, of the intestinal tract and of the various organs. In the early stage of the disease, a more or less marked, at times hæmorrhagic, redness and swelling, especially of the lymphoid apparatus, is found in the region of the peptic glands and the upper portion of the small intestine. Lower down, towards the large intestine, the entire mucous membrane is densely infiltrated and friable, of a dark red color, in part from injection of the vessels, in part from hæmorrhages into the tissue. The surface is covered with an abundant layer of tenacious, bloody mucus.

Later, grayish yellow or red false membranes are found at intervals upon the sur-

face of the mucous coat, loosely adherent; when separated, more or less deep erosions are presented. The entire series of alterations are those of catarrhal, hæmorrhagic and diphtheritic inflammation.

An analogous affection of the mucous membrane of the respiratory, urinary and genital apparatus is also found; also numerous minute hæmorrhages in the various mucous membranes, the pleuræ, pericardium, endocardium and lungs; further, a dark color and increased density of the blood. A parenchymatous degeneration of the liver and kidneys is very constant, and of the myocardium to a less degree, occurring so early in the disease as to be almost pathognomonic where the intestinal alterations are but slightly marked. Corresponding with the constant albuminuria is found extensive fatty degeneration of the kidneys.

Bollinger observes analogous alterations resulting from putrid infection, whether the same occurs spontaneously or is produced artificially.

Malignant Pustule.—The same author (Bollinger, *Centrblatt*, 1872, p. 417) gives the results of numerous observations and experiments with regard to this disease, rendered all the more interesting by comparison with the report on infection.

In the blood of diseased animals (neat-cattle and horses) there are found almost constantly during life and after death, rod-like bodies.

If these bodies are absent, the blood from the animal, after inoculation, will produce malignant pustule, and the blood of the animals thus inoculated may contain these bodies. Bollinger explains this fact on the ground that bacterium germs are in the blood thus used, which produce bacteria after inoculation. Where the anthrax blood contains bacteria it may be inoculated and produce the disease without the bacteria, but the blood of the animal thus acted upon contains the germs which may develop after death into the rod-like bodies. A thorough description is given of these bodies, and it is stated that they may be distinguished from other bacteria by their form, &c. They can be preserved when dried, but are destroyed by putrefaction; their development depends upon the presence of oxygen. Putrid anthrax-blood in which the bacteria are destroyed never produces malignant pustule by vaccination. The enzootic malignant pustule occurs among animals without reference to season, species, age or sex. The diseased animals are, without exception, well-nourished, and

generally those which are placed in the infected stalls a short time before the manifestation of the disease. The transmission of the contagium takes place without the means of insects (flies). The described cases of mycosis intestinalis among men are to be considered as rare forms of malignant pustule, though the disposition of the human species to this disease is slight. The parasitic nature of anthrax, apart from other experimental and anatomical facts, is mainly proven from the fact that the clinical and anatomical appearances, especially in the apoplectiform and active varieties, can be declared from the physiological qualities and effects of the anthrax bacterium. The chemical effect of the bacterium in the living body is due to the enormous chemical affinity of these bodies for oxygen, which they remove from the red blood-corpuscles; want of oxygen and excess of carbonic acid produce the symptoms, dyspnoea, cyanosis, convulsions, dilated pupil, sinking of temperature, and, finally, asphyxia. All the changes as in poisoning by carbonic acid are found after death. The apoplectiform cases correspond with the fatal cases from prussic acid; the appearances in the latter are the same as in apoplectiform anthrax.

Chronic Lead Poisoning.—Kussmaul and Maier (*Deutsches Arch. f. Klin. Med.*, 9, 3, *Berl. Klin. Woch.*, 1872, p. 132) examined the body of a house-painter who had been under observation during repeated attacks of this disease, and who died suddenly during an attack of colic. Chronic catarrh of the entire intestinal tract was present, atrophy of the gastric glands, fatty degeneration of the muscular coat of the stomach in the pyloric region and of the small intestine; atrophy of the mucous membrane of the jejunum, ileum and ascending colon; thickening of the submucous coat of the stomach and intestines, with thickening and condensation of the sheaths of the small arteries. The sympathetic showed several indurated ganglia, especially the celiac and superior cervical. In the brain, a slight degree of periarteritis, especially in the cortical substance.

Tuberculosis.—The following is abstracted from a series of six experiments performed by Paraskeva and Zallouis (*Gaz. Méd.*, 1872, No. 17, *Centrblatt*, 1872, p. 413). The account of the autopsy is so incomplete that no special weight can be attributed to the observation. A fisherman, æt. 55, previously healthy, without hereditary predisposition to tuberculosis, died of gradually advancing gangrene. Five weeks

before his death, the purulent contents from a cavity in a tuberculous individual was injected into the cellular tissue of the left hip. The autopsy showed at the top of the right lung seventeen hard tubercles of the size of a lentil, two at the apex of the left lung, and two of the size of peas on the convex surface of the liver.

Neureutter (*Oest. Jahr. f. Paediatrik*, 1871, p. 105) gives the analysis of the autopsies of 210 cases of miliary tuberculosis in children. Sex.—101 boys, 109 girls.

Age.—from birth to 1st year 18,
 1st " 4th " 101,
 4th " 8th " 60,
 8th " 14th " 31.

In 107 cases miliary tuberculosis alone was present; in 103 cases it was secondary, as an acute attack, to an existing chronic tuberculosis. In all, excepting 18 cases, the lymphatic glands were diseased, either cheesy or containing gray or yellow nodules, of varying size, isolated or in groups. Among the 18 there was but one case, a boy of ten weeks, where no cheesy nodule could be found; the others contained such in brain, lungs or bones.

Chronic inflammation of the lungs, cheesy pneumonia, was the most frequent disease accompanying the miliary tuberculosis. Miliary tuberculosis of the meninges, without participation of the lungs, occurred 18 times; in 4 cases only was a miliary deposit in other organs (spleen, liver, kidneys). In the other 14, the meninges were the sole seat of tuberculosis, and in three of these cases there were also cerebral tubercles.

Miliary tuberculosis of the membranes, with simultaneous disease of the lungs, occurred in 50 cases, in 38 of which other organs were the seat of miliary disease. Miliary tuberculosis of the lungs, without meningeal tuberculosis, occurred in 142 cases, 98 of which had miliary tubercles of other organs.

With regard to the origin of the giant-cell in tubercle, Prof. Schüppel makes the following communication (*Arch. d. Heilkunde*, 1872, p. 69). A previous paper is referred to, in which he states that the tubercle in lymphatic glands occurs in the follicles, always commencing with the appearance of a giant-cell in the previously healthy gland tissue.

In the present article he describes the appearance of a finely granular mass, to be found in the minute bloodvessels, sometimes as three or four clumps, which he regards as protoplasm from which the giant-cells develop. The vessels containing this

material were allied in structure to the minutest veins, though rarely similar bodies were found in the capillaries and minute arteries. Nuclei then make their appearance in varying numbers, as many as sixty. The form of the mass then changes from globular to angular, with scalloped borders, which change of shape is regarded as an evidence of active power of motion.

The tubercle, at the acme of its development, shows, in addition to one or more giant-cells, a number of epithelial cells, whose protoplasm resembles that of the giant-cells. Schüppel considers it as probable that the cells of the tubercle may originate from the giant-cell, by separation from its mass; also from proliferation of these new cells. The reticulum is regarded as newly formed, first making its appearance with the advance of cell-formation outside the giant-cell, its meshes being regarded as differentiated protoplasm of the latter.

Lymphatic Growths following Diphtheritis.—The case of a woman with pharyngeal diphtheritis, accompanied by relapses extending over a period of six months, is reported by Roth (*Virch. Arch.*, vol. liv. p. 254, *Centrbl.*, 1872, p. 494). There were found at the autopsy old and recent diphtheritic cicatrices, atrophy of the heart, fresh broncho-pneumonic infiltrations in the lower lobes of both lungs.

In both kidneys and in the entire digestive tract were peculiar gray, white and red, soft nodules, in the former varying in size from that of millet to beans, in the latter from that of hemp-seed to peas. In the kidneys, they commenced upon the surface, from which they entered the parenchyma for a considerable distance. In the stomach and intestine they were a submucous infiltration, causing an elevation of the partly unaltered, partly superficially ulcerated mucous membrane. Very small, sub-miliary nodules were found in the mucous membrane of the renal pelves, bladder, larynx and trachea. Pulp and follicles of the spleen hyperplastic. The lymphatic glands of the body, especially those of the mesentery, were similarly altered. There was no perceptible increase of the white blood-corpuscles.

Microscopically, the renal deposits agreed structurally with the leucæmic new-formations described by Virchow. In the other parts, they appeared as accumulations of small, round cells, while numerous analogous infiltrations occurred in the inter-acinous tissue of the apparently simply enlarged liver.

Rapidity of Growth of Malignant Tumors.—Hahn (*Allg. Med. Centr. Zeit.*, 1872, No. 47) presented to the Berlin Obstetrical Society a specimen of sarcoma of the right kidney, from a child of ten months, which had developed to the size of a child's head in four weeks.

Monti (*Jahr b. f. Kinderheilkde*, 1872, p. 321) narrates the case of a boy, *æt.* 9, of healthy parentage, who lived two and a half months after the commencement of his symptoms. The diagnosis of cancer was confirmed by the use of the exploratory trocar.

At the autopsy, cancer (round cell sarcoma) of the kidney, liver, retro-peritoneal glands, lungs and pleura was found. The kidney was five times, the liver twice the ordinary size, and the diseased retro-peritoneal glands formed a fluctuating mass three times the size of the first. There were extensive hæmorrhagic false membranes on the peritoneal surface of the various abdominal organs, and four to five pounds of hæmorrhagic fluid in the peritoneal cavity.

Dr. Stokes (*Dublin Journal of Med. Science*, July, 1872) reported to the Dublin Pathological Society the case of a man, *æt.* 22, who died after an illness of ten weeks, the prominent symptoms being anasarca, ascites, and the presence of about twenty hard nodules, of the size of hazel-nuts, to be felt through the abdominal parietes. At the left sterno-clavicular articulation was a tumor as large as a pullet's egg. The large tumor appeared intermediate between colloid and encephaloid. The anterior mediastinum was filled with a similar growth; like tumors were in the lungs, also in the heart, in the mesenteric and intestinal glands. The liver was unaltered. Masses were found upon the pleural surface, in many places melanotic.

[To be concluded.]

EPILEPSY CURED BY THE USE OF BROMIDE OF POTASSIUM AND SULPHATE OF ATROPIA.—Dr. L. P. Yandell, Jr. (*The American Practitioner*, Sept., 1872) reports three cases of the above disease. In the first, a girl 13 years of age, the bromide alone had been used in full doses for many months without relief. Dr. Y. gave her twenty-six grains of the bromide three times a day, and one hundredth of a grain of the sulphate of atropia night and morning. The attacks soon became less frequent, and in seven months had apparently disappeared. She was directed, however, to continue the medicine twelve months more.

Reports of Medical Societies.

BOSTON SOCIETY OF MEDICAL SCIENCES.
EDWARD WIGGLESWORTH, JR., M.D., SECRETARY.

MAY 28th, 1872.—The Society met at the house of Dr. Amory, Dr. Richardson in the chair.

Du Bois Reymond's "Sledge-apparatus" for generating the Faradic Current.—Dr. Lincoln exhibited the "sledge-apparatus" of Du Bois Reymond, which was described in the report of the last meeting, but was under repair at that time. He showed how the hand holding the electrode could be made to vibrate rhythmically at the rate of four times in a second and upwards, thus demonstrating the rate at which the current was interrupted; also, how the irregularity in the supply of force (from a Smee battery) made the vibration irregular in extent. The Smee element is inconstant; the Leclanché (constant) makes the apparatus work with great smoothness.

The Micro-spectroscope.—Dr. Amory exhibited and explained the method of using a micro-spectroscope. The instrument was obtained from Messrs. Beck, of London, and consisted simply of a tube carrying a direct vision system of five prisms and an achromatic lens, below which are two movable screws which can shut off the light transmitted from the mirror belonging to the microscope into which the spectroscopic eyepiece may be fitted. In addition, this eyepiece has another adjustable slit on its side, and by means of another prism the spectrum of an object placed upon a stage in front of the slit may be brought into focus and compared with the object placed upon the stage of the microscope. In this way the observer perceives two spectra, one superposed upon the other, the lower one being that of an object exhibited under a low power of the microscope, whilst the upper one is the spectrum of some known substance, and is not magnified by the microscope. Dr. Amory stated that he had received the instrument only a short time since, and had not experimented with it to any extent. His experiments had been confined to the spectra of blood, taken from healthy animals, and from those killed by carbonic oxide or chloroform inhalation, as well as from those killed after a certain dose of chloral.

The micro-spectroscope is useful only for the examination of absorption bands; and, as the intensity of these bands depends

upon the concentration of the liquids, it was extremely difficult to obtain results of analysis which might be considered thoroughly trustworthy.

Dr. Amory also exhibited an accessory apparatus which could be adjusted to the stage in front of the slit, and in which were two polarizing prisms by which the rays of light were so refracted as to produce in the spectrum a series of ten equidistant vertical lines; by means of this scale the position of the absorption bands of any substance under examination can be definitely ascertained by night as well as by day. In daylight, the position of the Fraunhofer lines in the spectrum can be determined, so that this scale need not then be used.

Dr. Amory exhibited certain plates illustrating the spectra of blood in different degrees of solution in water, of permanganate of potassa, of lobelia, of aniline red, of henbane, &c.

Dr. Ellis asked if any use could be made of the instrument in determining the degrees of spæmia in patients suffering from deterioration of the blood.

Dr. Amory stated that the spectroscope could merely determine the presence of hæmoglobine contained in the blood corpuscles which may afterwards be dissolved in water; and from the fact that the different degrees of concentration can be as easily detected by the eye without the instrument as with it, the different degrees of spæmia could not be determined by the microspectroscope in its present condition with any additional definiteness. The amount of hæmoglobine present determines definitely the width of the absorption bands and the color, it is true, but these are no easier to be judged of by the eye than are the shades of difference of color presented to the naked eye by solutions of blood of varying intensities. If, for example, we have 100 parts of blood in 100,000 of water, the simple addition of four elements of blood produces a perceptible alteration in the color of the solution.

Dr. Ellis asked if other materials, in solutions varying in intensity, produced similar changes in the absorption bands.

Dr. Amory responded that the spectroscope could be employed for the examination of many objects, gases and metals even, that it was a delicate instrument and requires the volatilization of the ingredients employed, that the width of the absorption bands varies with the intensity of the solution of the blood corpuscles, but that a band drawn in the centre is always constant, that certain other substances prevent

the transmission of different rays of color, and their presence is to be determined by this rather than by the width of the bands.

Dr. White, in this connection, spoke of the practical recognition of hæmoglobine as such, and as distinguished from other materials, and the consequent introduction of the micro-spectroscope into legal medicine for the determination of blood stains, but considered that certainty has not been attained. The more colors experimented with, the more are found which approach the degree of oxidation of hæmoglobine, and the recent employment of the instrument in courts of law in England Dr. White considered rash.

Paralysis, with Morbid Change in the Arteries.—Dr. Webber exhibited drawings showing two varieties of calcareous degeneration of the smaller arteries. Both were from patients said to have had general paralysis. One represented a small arteriole. The degeneration was external upon or in the outer coat of the arterial wall. The separate spots of calcareous change resembled in many places oil drops; occasionally a large spot of a more crystalline structure was seen. Several very large, crystalline bodies were found in close relation to the arteries. These deposits were shown to be calcareous by the evolution of gas on the addition of muriatic or nitric acid. After the action of the acid, an organic stroma was left, having nearly the shape of the calcareous deposit.

The second drawing represented an arteriole and a small vein from a patient of Dr. Fisher.

The artery was incrustated internally by a comparatively thick calcareous deposit, by which it was transformed into a small chalk tube, its calibre being very much diminished. The smallest arterioles were only partially affected and the deposit could be better studied in them. At first, only small, round spots were noticed lying among the nuclei. These increased in number, and were frequently arranged in rows having a transverse direction. Soon the muscular nuclei disappeared, the longitudinal nuclei of the inner coat being still visible, and it was not until the deposit had become considerable in amount that the longitudinal nuclei were no longer to be seen. It may be supposed, then, that the deposit was made in the muscular coat and finally occupied its entire extent. The large arteries at the base of the brain seemed to be normal.

Prof. Ludwig Meyer, in a paper on fat granules and granular cells in the brain

and cord [*Archiv f. Psychiatrie u. Nervenkrankheiten*, iii. 1, 2), states that calcareous change may occur in the fatty granular nuclei of the vessels and thus calcification may take place. This may be the method in which the former variety of calcareous degeneration originated, but the second seems to have had an entirely different origin, independent of the nuclei to which Prof. Meyer refers.

Dr. Fitz mentioned that petrificative degeneration of the cells of the muscular coats of vessels is described by Virchow. A circular sheath of muscular fibres is seen, and muscular cells come out distinctly on removing the lime.

In reply to Dr. Ellis, Dr. Webber said that one patient was less than 40 years of age, the other about 37. No maniacal symptoms were present. The patients gradually lost their powers and became irritable and noisy.

Physiological Importance of Alcohol for the Animal Organism.—Dr. Bowditch, in continuation of remarks made by him at the February meeting of the Society, and in support of his opinions at that time advanced with regard to the value of alcohol as a nutriment, adduced the recently published views of Prof. Voit, of Munich, as elicited by an article on the nutritive value of alcohol, published by Dr. Sabbotin in the *Zeitschrift für Biologie*. [Boston Med. and Surg. Journal, June 27, 1872.] Prof. Voit defines a nutriment as a substance capable of furnishing to the body any of its necessary constituents or of preventing the removal of such constituents from the body. This definition, while very comprehensive, is yet exact, and an exact definition of our ideas in regard to the terms "nutriment and nutrition" is, of course, an essential preliminary to discussion. In wasting diseases, where large amounts of alcohol are borne without narcotism, it would seem as if its results were nourishment rather than stimulation.

Dr. Ellis suggested that under Voit's definition, sleep might be considered a nutriment as interfering with destructive metamorphosis.

Dr. White added that some gases would come under the same definition, and asked for the results of experiments with alcohol in case of diseases.

Dr. Bowditch said that as yet these were few. The secretions from the lungs and skin must be examined as well as that from the kidneys. If an increase of carbonic acid and water is proved corresponding to the amount of alcohol not otherwise ac-

counted for, we may perhaps consider that the alcohol has been thus used.

Dr. Webber said that he had given rum in debilitated cases, and that no odor was apparent in the breath until large doses had been given. His rule was to push the alcohol until such odor was perceived, and he believed life had been saved by so doing.

Dr. Webber spoke of peculiarities of sensation when the æsthesiometer is used. In three cases, the patients had spoken of the sensation produced as resembling that caused by a row of points. In a case of locomotor ataxia, the more the points of the instrument were separated the greater was the apparent increase in the number of points felt in the row.

Dr. Amory then invited the Society to visit his physiological laboratory, and exhibited the following experiment. Ten drops of chloroform in water (after an interval of ten minutes repeated) were subcutaneously injected, the former into the abdominal cavity, the latter into the loose skin above the bend of the knee-joint of the hind leg of a dog. The animal was then made to exhale through a combustion tube packed with asbestos and heated red hot in a Hoffman furnace of 170 burners (100 only used in this experiment), and then into an acidulated solution of nitrate of silver. Six minutes after the second subcutaneous injection, chlorine gas was seen to pass from the outlet of the tube, and a white precipitate of chloride of silver deposit in the silver solution. This proved the fact that chloroform had been eliminated six minutes after its hypodermic injection, its presence being determined from its decomposition by a red heat into hydrochloric acid (precipitating as chloride of silver), and chlorine gas escaping from the outlet.

SUICIDE ATTEMPTED BY MEANS OF PETROLEUM (*Mitt. d. Aerztl. Ver. in Wien*, 1872, No. 6).—A woman, 45 years old, drank one-half litre of petroleum, such as is found in the shops, for the purposes of suicide. Symptoms of intoxication were very slight; pain in the stomach and fever were almost entirely absent. The cutaneous surface smelt strongly of the petroleum, but not the breath. Her urine contained albumen, pus and epithelium, and manifested an alkaline reaction. The strong odor of petroleum remained upon the skin for six days, after which the woman recovered entirely. —*Phil. Med. Times*.

Bibliographical Notices.

The Principles and Practice of Surgery.

By FRANK HASTINGS HAMILTON, M.D.,
Professor of Surgery in Bellevue Hospital Medical College, &c. New York:
William Wood & Co. 1872. Pp. 943.

DR. HAMILTON has again placed the profession under an obligation in the form of a new text-book, designed both for the medical student and as a direct guide to the surgeon. It is true, we have been liberally supplied with simple text-books, perhaps too freely; but each one of those recently given to the public has had its own advantages which have recommended it. We have already expressed the view that a text-book proper is generally of little value, except for the primary instruction of the younger men, simply touching, as it does, on all the topics of surgery, but failing to furnish to the working man the minutiae of each subject which he needs in actual practice. To a certain extent and necessarily the work of Dr. Hamilton is susceptible of this criticism; it is strictly a text-book; but the full discussion which is given to the more important topics of surgery fit it more completely than usual as an aid to the practising surgeon. "Whenever it seemed necessary to a thorough comprehension of the subject, a more minute description of the surgical anatomy and of the most approved operative procedures than is usually found in similar treatises" has been employed. It is, in this respect, not less valuable to the student, and to the practitioner takes the place of the more elaborate monographs which are beyond the reach of many. We wish that our text-books on all the subjects of medical literature might, in like manner, cease to be mere leading strings for the youngest, but helps to thought, and working tools in the hands of the maturer men.

The book is divided into two parts: the first on general and the second on regional surgery. It is subdivided into chapters, much as is done in general treatises on the subject of surgery. The author allots more space than usual to gun-shot wounds, fractures, dislocations and amputations, to aneurisms and hernia, subjects in which he has been more particularly interested and in which his reputation is well known. In the treatment of these topics especially the author has employed precise and clear language, and, without entering into undue

discussion of the views expressed by other men, gives sufficiently thorough and practical information. In almost every respect, the book is thoroughly reliable; the care and thoroughness with which the more important points are treated give it a good character, and the smoothness of its composition renders its perusal most agreeable. X.

On Winter Cough, &c. A Course of Lectures by HORACE DOBELL, M.D. New and enlarged Edition, with colored Plates. Philadelphia: Lindsay & Blakiston. 1872. Pp. 258.

THIS work treats of catarrhal bronchitis, emphysema, asthma, and the relation, especially that of the first three, to each other.

In the preliminary discussion as to the production of emphysema, the author rejects the current hypothesis—that it may be due to forcible expansion of the pulmonary vesicles during inspiration, or to a compensatory dilatation of the vesicles rendered necessary by the collapse of neighboring portions of the lung, or to a degeneration of the tissue of the vesicles, which renders them unable to withstand the normal dilating influences of respiration, and regards emphysema as caused by the forcible expansion of the lung during the expiratory act. Any obstruction to the expiratory tide which may arise favors the production of the emphysematous condition, whether it be a sudden strain, as from parturition, lifting heavy weights, fits of convulsive coughing, &c.; or from ordinary acts of coughing, sneezing, nose-blowing, &c., when the naso-pulmonary passages have been narrowed from previous disease.

The writer dwells at length on the evils arising from neglected winter coughs; showing that from year to year the attacks return, giving the patient increasing discomfort, causing congestion and thickening of the naso-pulmonary mucous membranes. This narrowing of the respiratory tubes becomes more persistent with each successive cold, until at length comes a combination of some or all of the evils resulting from such repetitions, viz. dilated right heart, collapsed lung, emphysema, &c.

Three chapters are devoted to the hygienic and medicinal treatment of winter cough. A few lines opposing a popular delusion, and one which we fear physicians are not careful enough to expose, are as follows (p. 184):—"It is quite astonishing what follies are committed with regard to the temperature of sleeping-rooms. On

what possible grounds people justify the sudden transition from a hot sitting-room to a wretchedly cold bedroom, which may not have had a fire in it for weeks or months, it is impossible to say; but it is quite certain that the absurd neglect of proper warming in bedrooms is a frightful source of all forms of catarrh. We cannot too much impress this upon our patients." A good index concludes the volume. G.

Evolution of Life. By HENRY C. CHAPMAN, M.D., Member of the Academy of Natural Sciences, Philadelphia. Philadelphia: J. B. Lippincott & Co. 1873.

It is but fair to the author of a work like the present one to mention his aim before criticizing his performance. Dr. Chapman, as he states in the preface, proposes to give a popular account of "the most important generalizations in reference to the structure of plants and animals, their petrified remains, and mode of development, and to point out how the theory of the Evolution of Life follows from the acts of anatomy, geology and embryology." This is for the benefit of "the medical and literary world generally, whose acquaintance with the writings of the distinguished savans just mentioned (Lamarck, Darwin and others) is necessarily superficial from the nature of their pursuits."

The book is a good compilation, but might have been a much better one had the author dwelt more upon the objections to the theory. Having accepted it himself, he appears to see little or nothing to prevent others from doing the same.

There is an unwarrantable boldness of statement, and much is given as probable or certain which would be thought rather doubtful were it not for the very theory which it is to prove. No one with well-founded objections will find anything here to shake them, but those inclined to believe will consider the book strong in a direct ratio to their ignorance of the subject.

Provided he bear this in mind, the general reader will find the book worth his perusal; one side of the question is cleverly, though superficially, put. D.

RECEIPT AGAINST CHOLERA.—On the occasion of a great epidemic—probably one of cholera—which reigned in the seventeenth century, the following quatrain had much vogue. *La France Médicale*, which has disinterred it, thinks it still applicable.

"Tiens tes pattes en chaud. Tiens vides tes boyaux,
Ne vois pas Marguerite; au cholera tu seras quitte."

Medical and Surgical Journal.

BOSTON: THURSDAY, OCTOBER 17, 1872.

WANTED—PUBLIC AMBULANCES.

"WHY in the name of humanity do not the proper authorities provide one or more ambulances, stationed at a convenient point, to be used in case of accident for conveying sufferers to the hospital or their homes, with such speed and comfort as may be? Should any be inclined to doubt the necessity of such a vehicle, the sight of four policemen recently conveying the mutilated form of an unfortunate laborer upon a wooden stretcher, in a rain storm through the streets to the police-station, pressed by a throng of gaping idlers—to say nothing of his subsequent removal in an ale wagon, with ghastly features still exposed—would convince the most indifferent that there existed shameful room for an improvement, which hardly a day in the year would fail to prove a measure of mercy and decency, and occasionally, perhaps, even an actual saving of life."

We need not apologize for the reproduction of the above, taken from the *Daily Advertiser* of this city, for the pertinence of the matter is most obvious, and it will meet the approval of all physicians, and especially of all hospital-surgeons who are accustomed to the collapse of newly arrived patients, and who know to how great a degree the shock of injury is increased by exposure and by a jolting journey in open express wagons in care of attendants unused to such service.

The item quoted repeats a suggestion made by ourselves a year ago, in which we felt called upon to urge the establishment of a metropolitan ambulance system. Why may we not have the advantages used in other cities, and be able to offer our sick and maimed fellow-citizens a reasonably safe and comfortable means of transportation? Accidents are constantly occurring, and the victims must be moved to their homes or the hospital; patients usually considered "too ill to be moved," may, with ease and safety, be placed on a stretcher by skilled hands, and then conveyed in an ambulance from homes of poverty, of filth and darkness, to more favorable situations for recovery. It is often desirable for patients of ample means to be moved from one part

of a city to another; such a move could certainly be effected under the most advantageous circumstances by the ambulance corps, and the invalid or his friends would not grudge a fee which might be charged for the conveyance. Thus in many ways would the ambulance become a public blessing.

THE BOSTON DISPENSARY FOR NERVOUS DISEASES was opened at No. 241 Harrison Avenue, in May last, and has, therefore, been in operation somewhat over four months. During this time over fifty patients have been treated, most of whom have been apparently worthy poor persons; in a few instances the applicants have belonged to a higher class and have been recommended to employ their own physicians.

The diseases which come under the designation "nervous" are of a sufficiently varied nature; those treated at the dispensary have furnished examples of some of the rarer and many of the more common diseases included in this class. The results of treatment have been varied. Some patients, afflicted with almost absolutely incurable diseases, have been very persistent in their attendance; and others, easily curable or capable of decided partial improvement, have made but one or two visits, leaving the physicians in doubt as to the benefit they may have derived from treatment. In spite of numerous obstacles, however, the dispensary has had a good degree of success, and, under the care of Dr. Lincoln and his assistant, Dr. Williams, has done a good work. These gentlemen have introduced a degree of scientific thoroughness into the examination and treatment of their cases which leaves nothing to be desired, and which will put the patient in a fair way to recover, so far as medical science is capable of accomplishing it.

The dispensary is in possession of a complete electrical apparatus, which, it need hardly be said, is an essential means of treatment in many cases. An opportunity is freely offered to all medical men, interested in this branch of medicine, to see a class of cases which but rarely come under their notice; and to furnish them with gratuitous consultations upon the cases of their own poorest patients.

The Hospitals.

BOSTON CITY HOSPITAL.

Wound of Arm, with Injury to large Vessels. (Service of Dr. Gay.)—Sept. 23. Franklin H., et. 18, clerk. As this patient was attempting to capture a thief who was robbing the store of his employer, he received a stab in the left arm near the shoulder. The wound bled very profusely, but a policeman arrested the hæmorrhage by tying a handkerchief around the arm above the wound. This occurred about fifteen minutes before entrance to hospital. He walked with assistance, was pale, pulse accelerated, but not feeble. The clothing upon the arm was saturated with blood. Upon examination, there was found an incised wound about three and a half inches long in left arm just below the shoulder, passing in a slightly oblique direction inwards through deltoid and biceps muscles, severing the ulnar nerve and chipping out a piece of the brachial artery; also wounding the basilic and cephalic veins. The bone was exposed, but not denuded of its periosteum. On removing the handkerchief, the brachial artery spouted and there was profuse venous hæmorrhage. The bleeding was arrested by compression in the axilla. Patient was stimulated with brandy, and ether was administered. Dr. Cheever tied the brachial artery in the wound above and below, and also the large veins, completely arresting the hæmorrhage. The arm was covered from fingers to shoulder with cotton-wool, and a bandage and heater applied. As pulse was quite weak, one ounce of brandy was administered by enema.

24th.—Had much pain last night, which was relieved by morphia. Temperature, A.M., in axilla of sound side 105°, in palm of hand of same side 105°, in palm of injured side 103°. Tongue lightly coated, red at tip. Seven, P.M., temperature 101½°.

25th.—Temp. 100·5°; pulse 120. Injured arm warm. Pus in small quantity oozing from wound. Patient says that sensation is equally good in either hand. Has complained, at times, of numbness in fingers of injured side.

26th.—On pressing the finger nails, blood returns immediately on sound side, slowly on injured side. Appetite fair; diet, eggs, milk, beef-tea and chicken. Seems to be gaining daily. Urine has had to be drawn twice by catheter. To-day, passes it freely.

28th.—Pulse can be felt feebly in radial artery of affected side.

29th.—This A.M. there was a slight oozing of blood from the wound, and at 8, P.M., a profuse hæmorrhage took place, the ligature having separated from the brachial artery. A tourniquet was immediately applied, and a surgeon summoned.

Operation by Dr. Gay. Ether was administered, and the pulse, which had been 140 before ether, became slower and weaker. The arm was then amputated near the shoulder, by making an upper and lower flap and sawing through the surgical neck of the humerus. The collateral circulation had become well established and quite a number of ligatures were required. During the operation, the patient became nearly pulseless, but revived after stimulants had been given by enema. After recovering from the ether, he vomited and afterward seemed to doze a while. He was in a very weak state, and enemata of beef-tea and brandy were given but were not retained. Carbonate of ammonia and brandy were given by the mouth, but to no purpose, as he gradually failed and died at 2 o'clock on the morning of the 30th.

Multiple Injuries.—Sept. 5th. J. E., æt. 42, sailor. The patient fell about twenty feet, into the hold of a vessel, dislocating his right clavicle at both ends, fracturing two ribs on the right side, and receiving severe bruises upon the forehead. On entrance, he was suffering extreme pain, was very fretful and restless, and morph. sulph., gr. $\frac{1}{2}$, was injected subcutaneously. There was extensive emphysematous swelling about the right breast, extending over right side of the neck, which crackled under the finger. A pad was placed in the axilla, the elbow brought to the side and a bandage applied, which supported the ribs, and kept the elbow to the side and the clavicle in place.

Sept. 6th.—More comfortable. Patient has pain on drawing a long breath. Urine has to be drawn by catheter.

Sept. 7th., A.M.—Temp. 99½°. Coughs and raises easily thick yellow sputa, slightly tinged with blood. Tongue thickly coated with a white fur. Bandage removed, and a broad swathe applied around the chest, with shoulder-straps attached. Diet to be light and nourishing.

14th.—Much improved, and wishes to get up. There is much difficulty in keeping the sternal end of the clavicle in place, on account of the patient's restlessness.

24th.—Allowed to get up and walk about ward.

Oct. 1st.—Both ends of clavicle firm, sternal end very prominent. Some pain still in side on drawing long breath. Still wears swathe about chest.

Fracture of Scapula and Ribs, with Scalp Wound.—Sept. 25th. H. O., æt. 48, hackman. The patient was brought in from the police-station, having received injuries recently while intoxicated. Pulse was very feeble, skin cold and moist. Brandy was given. Examination revealed a large, irregular scalp wound near the left parietal protuberance, also a fracture of the right scapula transversely near the spine of scapula. Three or four ribs were broken on right side near their angles.

Broad, adhesive straps were placed around the chest and over the scapula. Arm bandaged to the side. The edges of wound in scalp were brought together by adhesive straps and two or three sutures.

Sept. 26th.—Patient gets out of bed and tears off part of bandage, and shows evidence of delirium tremens. Surface of body bathed in cold sweat. Manacles applied.

R. Quinæ sulph. gr. vi., every three hours.

Sept. 28th.—Pulse 120. Tongue dry, with brown coating. Takes beef tea. Tinct. capsici \mathfrak{m} xv. added to quinæ sulph. gr. vi., every three hours.

Sept. 29th.—Right side of head and face much swollen, especially in parotid region. Wound of scalp dressed with chlorinated soda wash.

R. Brandy \mathfrak{z} j., every two hours.

Sept. 30th.—Still wandering and delirious.

R. Chloral hydrat. gr. xv. every three hours.

R. Brandy \mathfrak{z} ss., every three hours.

Oct. 1st.—Swelling of head and face increasing. Neck also swelling. Difficulty in breathing. Pulse 120.

Oct. 2d.—Head, face and neck enormously swollen. Gradually failing. Died this evening.

Fracture of Skull, with Depression.—Aug. 8th., 1872. E. L., æt. 19, machinist. During a fight, this patient was struck upon the head with a large piece of iron, and knocked down insensible. On entrance, a very slight wound of the scalp was found over right parietal eminence. There was a feeling given to the finger as though a depression of the skull existed; but as this was somewhat doubtful, and the only symptom of compression being a slow pulse, it was deemed prudent to await the development of more reliable symptoms. Pupils

were natural. No paralysis or stertorous respiration. Pulse 50 and full. Complains of pain in head. Patient was put in bed, with cold application to head.

Aug. 9th.—Symptoms same as yesterday. Takes very little nourishment. Passes urine naturally.

10th.—Pulse 50. Condition about the same. Poultice applied to head. Seven, P.M., great pain in head. Ice-bag applied to head. Mustard sinapisms to calves of legs, and morphia sulph. gr. $\frac{1}{4}$ subcutaneously.

11th.—This morning pain quite severe. Considerable swelling of scalp, which feels elastic at site of injury.

Patient was etherized. Dr. Gay made a crucial incision through the scalp and found a depressed fracture of the skull to exist. The depression would probably admit half of an English walnut. It was necessary to trephine in order to remove the fragments, six in number. The opening left after operation was about an inch and a half square, extending towards the mastoid portion of temporal bone. The dura mater was found to be slightly torn. Two small vessels required ligature. Patient recovered from ether well, and complained of pain in head. Morphia was given subcutaneously, and cold water applied to head.

14th.—Pulse 80. Temperature 100°. Hernia cerebri exists, filling the opening in skull with a pulsating mass. Severe pain in head, relieved by subcutaneous injections of morphia.

17th.—Temperature 104°. Hernia cerebri increasing. Pulse 70 to 76, irregular.

18th.—Morning, temperature 105°; evening, temperature 106 $\frac{1}{2}$ °. Wound smelling rather foul. Poultice of linseed meal and charcoal applied.

19th.—Morning, Temperature 105.5°; evening, 104.5°. Hernia cerebri about the size of a hen's egg. Takes very little nourishment.

20th.—Morning, temperature 102°. Cannot recognize any one. Says his sight is impaired. There is some twitching of fingers. Two, P.M., pulse has gone up to 108, and is full and hard. When spoken to, does not answer, although a motion of the lips shows that he makes an attempt. An hour ago, could speak, and ate two peaches. The membranes over the hernia are sloughing, and there is some oozing of dark blood. Ice to head and mustard to calves of legs. Seven, P.M., condition about the same. Temperature 102.

21st.—Temperature 104.5°. Is sinking. Died at noon.

Dislocation of Spine.—Aug. 31st. P. C., æt. 30, laborer. Five days ago, the patient fell a distance of thirteen or fourteen feet, striking upon the back of his neck. Was seen at the time by a surgeon who has attended him since the injury. On entrance, it is found that he is paralyzed in motion and sensation. Sensation extends to nipples. Respiration entirely abdominal. Examination of neck shows a swelling at the junction of 5th and 6th cervical vertebra, but no displacement can be made out. Pupils are normal. It has been necessary to draw off the urine by catheter since the injury. Urine is high colored and ammoniacal. Pulse 76. Tongue covered with brown coating.

Sept. 2d.—Has had one or two involuntary discharges from bowels. Urine darker in color and some muco-pus escapes through catheter. Slight distention of abdomen. Face somewhat flushed. Can move right arm, apparently by muscles of the shoulder. Complains of thirst.

Sept. 5th.—Urine bloody and ammoniacal; reaction alkaline; sp. gr. 1015. Albumen present in large quantity. Microscope shows abundance of blood corpuscles.—Evening, pulse very rapid; patient very thirsty; complains that he cannot feel substances when swallowing. About 11.30 P.M. could not see, nor feel the hand of nurse upon his forehead, but was conscious, spoke and made known his wants. Died at midnight.

At the autopsy there was found a dislocation of the 5th and 6th cervical vertebrae compressing the cord. The cord was softened for some distance on either side of the compressed portion. Other organs were in good condition.

INOCULATION OF SMALLPOX BY SKIN-GRAFTING.—In a recent discussion on skin-grafting in the Berlin Medical Society, Herren Hahn and Zülzer referred to an instance recorded in the *Deutsche Militair-arztlich. Zeitschrift*, in which portions of skin for grafting were taken from the amputated limb of a woman in whom, the day after the operation, the eruption of smallpox appeared and proved fatal. One of the four patients on whom the skin was grafted had smallpox in a mild form. He was, however, a man of intemperate habits, and died, according to Herr Zülzer, of pneumonia.—*Brit. Med. Jour.*

OZONE AS A DISINFECTANT.—A company has been organized to furnish ozone apparatus for disinfection in Chicago.

Medical Miscellany.

MASSACHUSETTS GENERAL HOSPITAL.—Dr. F. I. Knight has been appointed Laryngoscopist to the Hospital.

DR. W. R. GIBBES, of Columbia, has been elected Professor of Anatomy and Surgery in the University of South Carolina, in place of Dr. Darby, resigned.

AGASSIZ.—Prof. Agassiz has been elected one of the eight Foreign Associate Members of the French Academy of Sciences, to fill the vacancy caused by the death of Sir Roderick Murchison.

The Medical Library of the late Professor Robley Dunglison, of Philadelphia, embracing a great variety of works in every department of Medical Literature, is in the hands of auctioneers and will be sold at an early day.

The Lectures of the Sixth Session of the School of Pharmacy commenced on Monday, the 14th instant. Lectures will be delivered at the College rooms, No. 8 Boylston street, in Pharmacy by Prof. Markoe, on Monday, at 3 and 7½ o'clock; Prof. Babcock on Wednesday, and Prof. Tracy on Friday, at the same hours.

We are glad to note that the college this year has made an important change in its system of instruction by adopting a graded course, and making stated examinations obligatory on all its students.

A WORD TO ENGLISH ETHERISTS FROM DR. SQUIBB.—"It may be safely said that those who resort to it (ether) after a long use of chloroform, and acquire the little skill necessary to use it well, will have a sense of safety and satisfaction which they never knew before."

PROF. BENTLEY, of the Medical College of the Pacific, has supplied his dissecting room with glass tables. Each table consists of a single slab of glass, three-fourths of an inch in thickness, two feet four inches in width, by seven feet in length. They possess all the properties of neatness, durability and even of elegance.

HOSPITAL APPOINTMENT.—Dr. Wm. H. Baker, of this city and lately one of the House Physicians of the City Hospital, has been appointed Assistant House Surgeon in the N. Y. State Woman's Hospital, New York city.

AMERICAN MEDICAL ASSOCIATION.—The triennial list of permanent members will be published this year. Permanent members who have not paid their assessments will please notice, "any permanent member who shall fail to pay his dues for *three successive years*, unless absent from the country, shall be dropped from the roll of Permanent members."

(Signed)

WM. B. ATKINSON,
Permanent Secretary.

DR. C. B. BRIGHAM, of this city, was, on the 8th of August last, decorated by the Emperor of Germany with the Imperial Order of the Crown for his valuable and meritorious services rendered alike to wounded German and French soldiers in the hospital at Nancy in the recent war.

WORCESTER CITY HOSPITAL.—By the fortunate termination of a will case, the city of Worcester becomes possessed of about \$100,000, to be held in trust for the establishment of a free Hospital. The property was left to the city by Deacon I. Washburn, as a memorial of his two deceased daughters. The city also holds in trust a large bequest from the late George Jaques, for the same purpose; it is proposed to unite the two bequests, for the more satisfactory accomplishment of the object.

BOOKS RECEIVED.—A Manual of Diseases of the Eye By C. MacNamara, Professor of Ophthalmic Medicine and Surgery in the Calcutta Medical College, &c. Philadelphia: Lindsay & Blakiston. Pp. 620. (From A. Williams & Co.)—A Handbook of Chemical Technology. By Rudolph Wagner, Ph.D., Professor of Chemical Technology in the University of Wurzburg, &c. Translated by W. Crookes, F.R.S. New York: D. Appleton & Co. 1872. Pp. 745. (From A. Williams & Co.)

PAMPHLETS RECEIVED.—Aiken and its Climate. By Amory Coffin, M.D., and W. H. Gedding, M.D. Charleston. 1872. Pp. 53.—Transactions of the Georgia Medical Association at its Twenty-third Annual Meeting. Atlanta, Ga. 1872. Pp. 134.

MARRIED.—In this city, 8th inst., Prince W. Page, M.D., to Miss Lucy W. Gould, both of Boston.

Deaths in fourteen Cities and Towns of Massachusetts, for the week ending Sept. 28, 1872.

Cities and Towns.	No. of Deaths.	Fitchburg	3
Boston	141	Taunton	12
Charlestown	13	Newburyport	3
Worcester	25	Somerville	6
Lowell	14		294
Cambridge	22		
Salem	7		
Lawrence	15		
Springfield	8		
Lynn	13		
Gloucester	12		

Prevalent Diseases.

Consumption	47
Cholera Infantum	30
Typhoid Fever	21

There were seventeen deaths from smallpox in Boston and one in Cambridge.

GEORGE DERRY, M.D.,
Secretary of State Board of Health.

DEATHS IN BOSTON for the week ending Saturday, October 5th, 153. Males, 56; females, 67. Accident, 3—asthma, 2—apoplexy, 3—cyanosis, cerebro-spinal meningitis, 1—inflammation of the bowels, 1—disease of the bladder, 1—bronchitis, 4—congestion of the brain, 1—burned, 1—cancer, 2—cholera infantum, 9—consumption, 24—convulsions, 2—croup, 1—debility, 1—diarrhoea, 3—dropsy, 1—dropsy of brain, 2—drowned, 3—dysentery, 1—erysipelas, 2—scarlet fever, 2—typhoid fever, 10—disease of the heart, 5—homicide, 1—infantile, 3—intemperance, 2—disease of the kidneys, 2—disease of the liver, 3—congestion of the lungs, 4—inflammation of the lungs, 4—marasmus, 9—old age, 4—paralysis, 1—premature birth, 5—parotitis, 1—puerperal disease, 2—smallpox, 22—whoop, cough, 1—unknown, 3 Under 5 years of age, 68—between 5 and 20 years, 11—between 20 and 40 years, 45—between 40 and 60 years, 15—above 60 years, 24. Born in the United States, 95—Ireland, 38—other places, 20.